

Doctor re-examines evidence on UTIs in patients with spinal cord injury

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People with spinal cord injuries rely on catheters to empty their bladder. When a well-respected publication concluded that catheters could be reused without an increased risk of infection, it didn't sit right with a Vancouver clinician and researcher. He had spoken to wheelchair athletes about this very issue while working at the Summer Paralympics in London.

"Wheelchair athletes from wealthier countries would only use each catheter once while athletes from developing countries would clean and reuse their catheters again and again," said Dr. Andrei Krassioukov, a professor of medicine at UBC and chair in rehabilitation research with ICORD. "The athletes who used catheters only once experienced three-to-four times fewer urinary tract infections than athletes who reused catheters."

Urinary tract infections can be disruptive to people's daily lives, resulting in time off work or from other activities. Antibiotics are prescribed to treat urinary tract infections. People with [spinal cord](#) injury are at higher risk for [urinary tract infection](#).

The issue of whether people can reuse catheters or if they should be single-use has long been debated in the [medical community](#). A catheter costs anywhere from \$5 to \$30 and people with [spinal cord injuries](#) use a new catheter every time they need to empty their bladder.

Around the world, and even within Canada, there are large differences in

the coverage of costs for catheters. In some countries, like France, it is illegal to reuse catheters. In other places, countries cannot afford to cover the costs of single-use catheters.

Cochrane is a well-established organization that collects data from many studies and provides evidence for best practices in medicine. In 2014, Cochrane reviewed evidence from 31 clinical trials to compare single vs. multiple-use catheters and urinary tract infections. The review found that there was no convincing evidence that the incidence of [infection](#) was affected by catheterization.

From his clinical experience and his study conducted at the Paralympics, Krassioukov had a "gut feeling" that the results were wrong. He assembled a team of experts from around the world to re-examine the evidence. They found a number of errors and wrote to Cochrane's acting editor-in-chief to alert him. An updated analysis by Cochrane, published in 2017, has since been withdrawn.

The team also systematically reviewed all 31 trials included in the 2014 Cochrane review and performed a meta-analysis of the data. They published their own findings last month in the *Journal of Neurotrauma*, indicating that the studies tend to favour single-use catheters.

"Until evidence can confidently demonstrate that multiple use is as safe as single use, health-care providers should advocate for single-use of catheters since catheter cleaning is a major issue," said Krassioukov. "This will affect the direction on how we manage patients."

While several groups have tried to develop catheters and sterilization techniques so that catheters can be reused safely, they have yet to be successful. When catheters are reused, bacteria are introduced that can cause infection in the urinary tract.

Co-authors of this study include Kathleen Christison, a UBC medical student who conducted this research as part of her program, Matthias Walter, a postdoctoral fellow at ICORD, Vanessa Noonan and Nader Fallah from the Rick Hansen Institute, and international collaborators Jean-Jacque Wyndaele, Dr. Michael Kennelly and Dr. Thomas Kessler.

Additional quotes:

Márcio Averbeck, head of neuro-urology at Moinhos de Vento Hospital in Brazil: "Most of my peers in Brazil do give a lot of value to the Cochrane reviews. The medical community truly appreciated the critical appraisal of the Cochrane review regarding re-use of catheters and urinary tract infections. It will impact our clinical practice in Brazil."

Ari Seirlis, chief executive officer of QuadPara Association of South Africa: "For many years, I was using a catheter for months at a time, washing the [catheter](#) between uses, and reusing it until it got replaced. This came with numerous bladder infections. Since using single-use catheters, I have not had a bladder infection in the last three years at least."

More information: Kathleen Christison et al, Intermittent catheterization: The devil is in the details, *Journal of Neurotrauma* (2017). [DOI: 10.1089/neu.2017.5413](https://doi.org/10.1089/neu.2017.5413)

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